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IS 3347-5-1 (1979): Dimensions for Porcelain Transformer Bushings for Use in Lightly Polluted Atmospheres - Part V : 36 kV Bushings, Section 1: Porcelain Parts [ETD 6: Electrical Insulators and Accessories]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS : 3347 (Part V/Sec 1) - 1979
(Reaffirmed 1999)

Indian Standard

DIMENSION FOR PORCELAIN
TRANSFORMER BUSHINGS FOR
USE IN NORMAL AND LIGHTLY
POLLUTED ATMOSPHERES

PART V 36 kV BUSHINGS

Section 1 Porcelain Parts

(Second Revision)

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BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG

NEW DELHI 110002

Indian Standard

DIMENSIONS FOR PORCELAIN TRANSFORMER BUSHINGS FOR USE IN NORMAL AND LIGHTLY POLLUTED ATMOSPHERES

PART V 36 kV BUSHINGS Section 1 Porcelain Parts

(Second Revision)

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AMENDMENT NO. 1 FEBRUARY 1989
TO
IS : 3347 (Part 5/Sec 1) - 1979 DIMENSIONS FOR
PORCELAIN TRANSFORMER BUSHINGS FOR
USE IN NORMAL AND LIGHTLY POLLUTED
ATMOSPHERES

PART 5 36 kV BUSHINGS

Section 1 Porcelain Parts

(Second Revision)

(First cover, pages 1 and 3, title) — Substitute the following for the existing title:

‘Indian Standard

DIMENSIONS FOR PORCELAIN TRANSFORMER
BUSHINGS FOR USE IN LIGHTLY POLLUTED
ATMOSPHERES

PART 5 36 kV BUSHINGS

Section 1 Porcelain Parts

(Second Revision)’

(Page 3, clause 0.2, second line) }
(Page 5, clause 1.1, third line) } — Delete the words ‘normal and’.

(ETDC 3)

Indian Standard

DIMENSIONS FOR PORECLAIN TRANSFORMER BUSHINGS FOR USE IN NORMAL AND LIGHTLY POLLUTED ATMOSPHERES

PART V 36 kV BUSHINGS Section 1 Porcelain Parts

(Second Revision)

0. FOREWORD

0.1 This Indian Standard (Part V/Sec 1) (Second Revision) was adopted by the Indian Standards Institution on 21 September 1979, after the draft finalized by the Electrical Insulators and Accessories Sectional Committee had been approved by the Electrotechnical Division Council.

0.2 This part (Part V) of the standard covers dimensions of porcelain transformer bushings for use in normal and lightly polluted atmospheres of 36 kV with the object of ensuring their interchangeability. To avoid multiplicity of sizes, the dimensions given are only for those ratings (voltage and current) which are being used appreciably. This part comprises two sections issued as two separate standards. While this section (Sec 1) covers the porcelain parts of the bushings, the dimensions of the metal parts to go with these porcelain parts are specified in the other section of IS : 3347 (Part V/Sec 2) - 1979*.

0.3 This standard (Part V/Sec 1) was first issued in 1965. The first revision was taken up in 1973 with a view to simplify the manufacture of the porcelain parts on large scale by permitting an alternative shape of their top petticoat in respect of all the ratings covered in this standard. This second revision has been undertaken to include dimensions of 2 000 A, and 3 150 A bushings.

0.4 The dimensions given in this standard have been arrived at after full consideration of the available sizes and an examination of the relevant merits of different types of bushings. Detailed dimensions have been given with a view to achieving maximum economy in the manufacture of the bushings.

*Dimensions for porcelain transformer bushings for use in normal and lightly polluted atmospheres : Part V 36 kV bushings, Section 2 Metal parts.

IS : 3347 (Part V/Sec 1) - 1979

0.5 The bushings are rated in terms of the highest system voltage (*see* IS : 2099-1973*). While this part (Part V) covers 36 kV bushings, the dimensions of the bushings for other voltages are given in the following parts of this standard:

- Part I Up to and including 1 kV bushings
 - Section 1 Porcelain parts
 - Section 2 Metal parts
- Part II 3.6 kV bushings
 - Section 1 Porcelain parts
 - Section 2 Metal parts
- Part III 12 and 17.5 kV bushings
 - Section 1 Porcelain parts
 - Section 2 Metal parts
- Part IV 24 kV bushings
 - Section 1 Porcelain parts
 - Section 2 Metal parts
- Part VI 72.5 kV bushings
 - Section 1 Porcelain parts
 - Section 2 Metal parts (*under preparation*)
- Part VII 123 kV bushings
 - Section 1 Porcelain parts
 - Section 2 Metal parts (*under preparation*)

0.6 The dimensions for porcelain transformer bushings for use in heavily polluted atmospheres are covered by the series of IS : 8603-1977†.

0.7 For 36 kV, bushings having restricted neck have been recommended.

0.8 The dimensions covered in this standard essentially apply to the bushings used outdoor with inner ends immersed in oil and suitable for use in normal and lightly polluted atmospheres.

0.9 The performance requirements of the bushings covered by this standard are given in IS : 2099-1973*.

*Specification for bushings for alternating voltages above 1 000 volts (*first revision*).

†Dimensions for porcelain transformer bushings for use in heavily polluted atmospheres.

0.10 In the preparation of this standard, assistance has been derived from the following standards issued by the Deutscher Normenausschuss:

DIN 42531 (1968) Transformatoren; Durchführungen für Innenraum und Freiluft, Reihen 10 N bis 30 N, 250 A (Indoor and outdoor transformer bushings : Insulation class 10 N to 30 N, 250 A).

DIN 42532 (1969) Transformatoren; Durchführungen für Innenraum und Freiluft, Reihen 10 N bis 30 N, 630 A (Indoor and outdoor transformer bushings : Insulation class 10 N to 30 N, 630 A).

DIN 42533 (1969) Transformatoren; Durchführungen für Innenraum und Freiluft, Reihen 10 N bis 30 N, 1 000 bis 3 150 A (Indoor and outdoor transformer bushings : Insulation class 10 N to 30 N, 1 000 to 3 150 A).

0.11 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

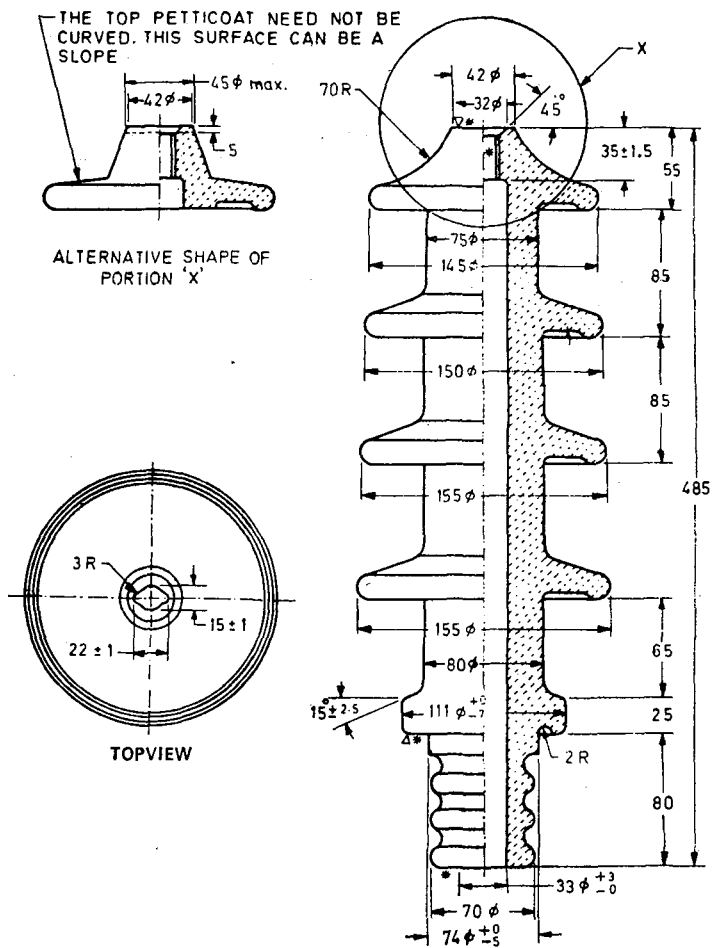
1.1 This standard (Part V/Sec 1) lays down the dimensions of the porcelain parts of the bushings of 36 kV used with transformers for use in normal and lightly polluted atmospheres.

2. DIMENSIONS

2.1 The dimensions of the porcelain parts for different ratings (kV/A) of the bushings are given in Fig. 1, 2 and 3.

2.2 Unless specified otherwise, tolerance on a dimension shall be $\pm (0.03 d + 0.3)$ mm, d being the dimension in millimetres.

*Rules for rounding off numerical values (revise 1).

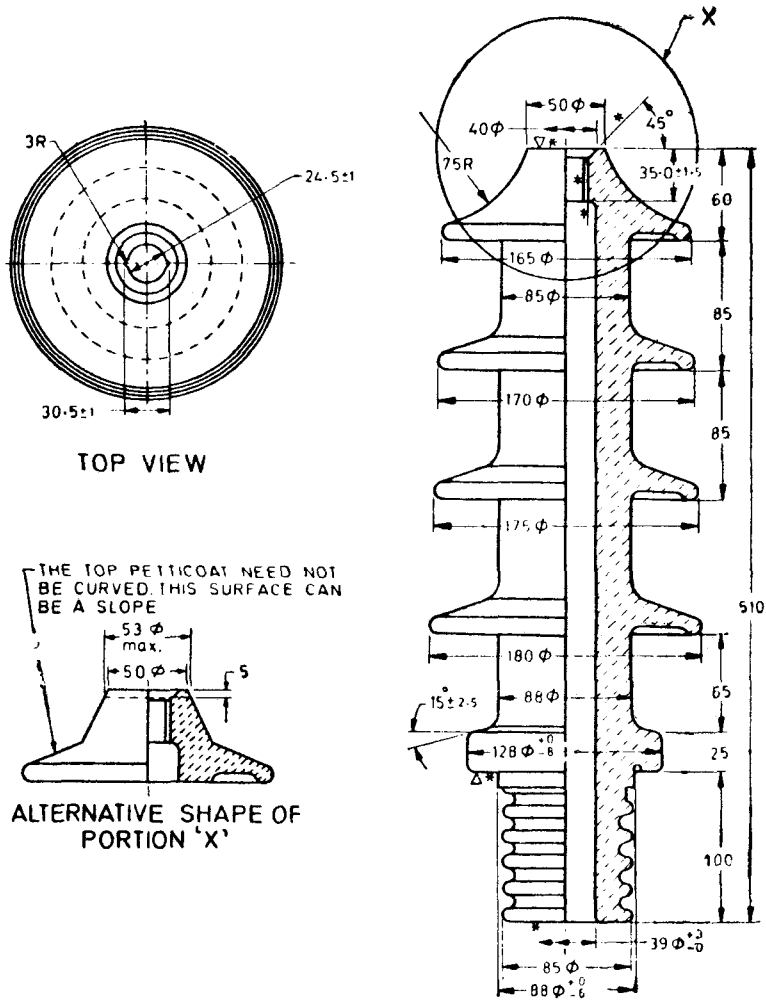


All dimensions in millimetres.

△ Surfaces perpendicular to axis.

* Unglazed.

FIG. 1 PORCELAIN PART FOR 36/250 kV/A BUSHING

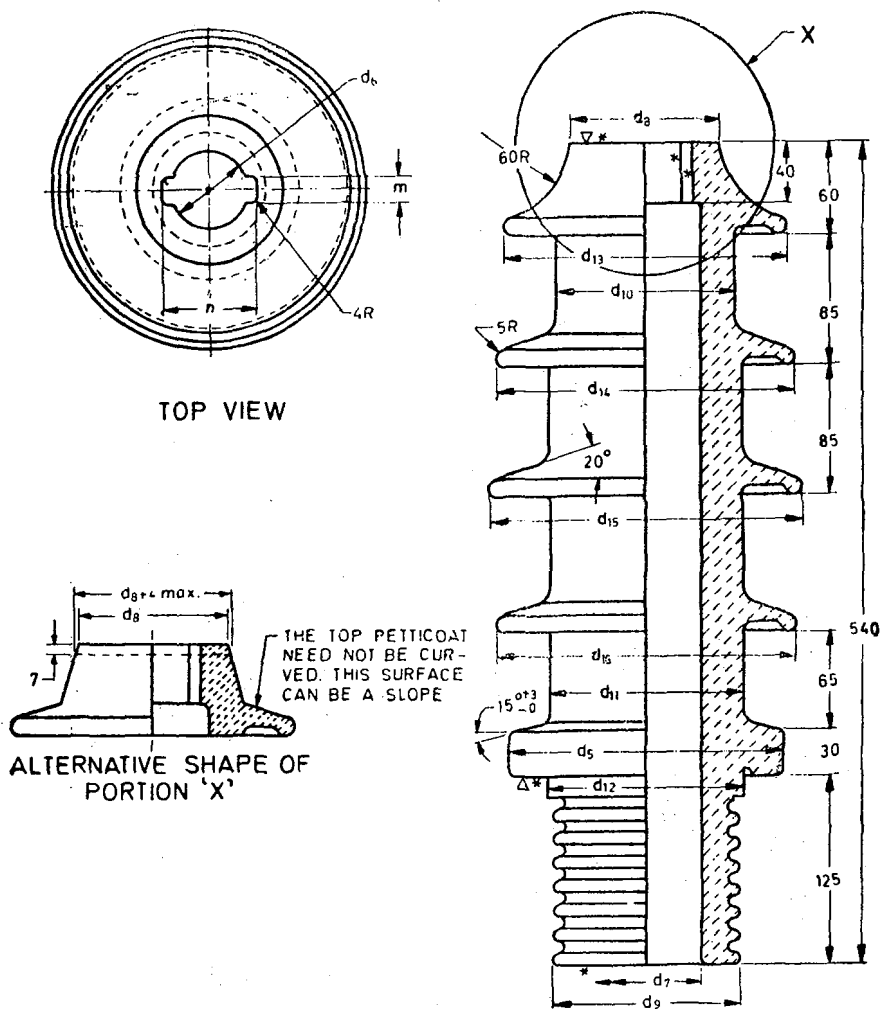


All dimensions in millimetres.

Δ Surfaces perpendicular to axis.

* Unglazed.

FIG. 2 PORCELAIN PART 36,630 kV/A BUSHING



| Rating kV/A | d_5 | d_6 | d_7 | d_8 | d_9 | d_{10} | d_{11} | d_{12} | d_{13} | d_{14} | d_{15} | d_{16} | $m^{+0.5}_{-0}$ | n^{+2}_{-0} |
|--------------------|------------------|-------|----------------|-------|-------|----------|----------|-----------------|----------|----------|----------|----------|-----------------|---------------|
| 36/1 000 | 163^{+0}_{-10} | 32 | 58^{+4}_{-0} | 80 | 100 | 105 | 110 | 108^{+0}_{-7} | 185 | 190 | 195 | 200 | 12 | 46 |
| 36/2 000, 3 150 | 183^{+0}_{-12} | 51 | 74^{+5}_{-0} | 100 | 125 | 120 | 130 | 131^{+0}_{-8} | 215 | 220 | 225 | 230 | 17 | 62 |

All dimensions in millimetres.

△ Surfaces perpendicular to axis.

* Unglazed.

FIG. 3 PORCELAIN PART FOR 36/1 000, 2 000 AND 3 150 kV/A BUSHINGS

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